

L-4 LIBERIA: HARBEL Hill in Firestone Plantation with virgin rain forest. Large tunnels, gray silk, with scattered frass on medium sized tree in full shade. Several large nymphs collected at least one antepenult ♂. May be Parachirembia liberica VIII-7-66 Boy Scout Camp

L-5 Same place but another hill. Two genera cultured (1) a terat-embriid (collected a male) in inconspicuous galleries in fine moss galleries partially in bark surface. Many stages including at least one penult ♂, a very small sp. (2) a larger species genus? nymphs chestnut brown, segments conspicuous, very active, about 6 cultured. In individual galleries usually following vertical grooves of bark. Tunnel surfaces dirty VIII-8-66 Mr Lotts house.

L-6 LIBERIA: 10 MI. N. GBANKA VIII-11-66 Bark crevices of large tree remnant of former dense rain forest in rolling hills. Tunnels exposed, visible from road colony 2' x 3'. Parachirembia some mat ♂ & ♀, penult and many 3rd instar. = STOP 3

L-7 LIBERIA: 8 MI. N.W. BELFFANAI VIII-11-66 Camps along river. Riverine forest. Large embriids in dirty galleries on large tree trunks and vines in deep shade. Possibly 2 spp. Parachirembia one entirely dark. Most $\frac{1}{2}$ - $\frac{1}{2}$ grown = STOP 4

L-8 LIBERIA: 2 MI. E. KOLAHUN VIII-13-66 Where I photographed rice threshing Parachirembia on scarred tree trunk in ^{small} patch of old forest between agric fields. No other colonies seen.

L-9 LIBERIA: CREST OF MT. NIMBA 1400 M VIII-15-66 Cloudy wet zone Small species common in tunnels ramifying in moss on limbs of felled, rough-barked tree. At times 2 embriids per short gallery. At times silk visible on bark beyond edge of moss. Seems to be teratembriid all about same size but none with wing pads ♂ could be apterous or absent. 1 juv. (?) ♀ of a larger species perhaps rhagadochirine, smoky black throughout under bark flake of standing tree.

L-10 Same place as L-9 Larger embriid, Parachirembia?, collected in great numbers in little patch galleries on undersurfaces of trunks and limbs of recently-felled large trees. Silk inconspicuous, dusted with bark or fecal particles. Usually contain only one individual. Most in one stage — about half grown. Wing pads not conspicuous, if indeed present

L-11 IVORY COAST: TOULÉPLEU 250 M VIII-18-66 Cultured 2 embriids one IC-1 ♀ juv. Parachirembia + one small juv at base of large rain forest tree in coffee plantation.

Type
Cultures
Nephelomima
nimbæ Ross

IC-#22 IVORY COAST: 9 MI. N. MAN, VIII-19-66,
On bark of trees, rock surfaces in gallery rain forest in rocky canyon
Silk clean blue-white, forming continuous patches with radiating galleries
beneath. Common in exposed places along road. Must be Nodosembia
Most in early instars. *Pale Nodosembia*

IC-3 IVORY COAST: 9 MI. N. MAN VIII-19-66
Same place as IC-2 but in dark forest. Dirty sheet galleries
on surface of smooth-barked tree with large smooth flakes.
Extended over a 3ft high area, 8 ft above ground, able to
scrape off only lower section and get 3-4 adult ♀ of a smaller
Parachionbia? Hope that they have mated.

IC-4 IVORY COAST: 5 MI. S. BAFING FOREST RES. ON ROAD S. OF TOUBA
VIII-19-66 400 M
Gallery rain forest in river valley, subject to longer dry
periods than coastal forest. Surrounding hills covered with
high grass and low trees. Appears to be same sp. as IC-2
on bark of large trees.

IC-5 IVORY COAST: 5 MI. S. TOUBA 450 M VIII-19-66 Camp
Savanna woodland very similar to Katanga. Small embryos,
possibly 2 spp, in and under bark crevices of dead twigs
and limbs of live trees. Some of these are young of a large sp.
with few surviving ♀ and mostly disintegrated webs.

IC-6 IVORY COAST: Same place
Short galleries occupied by 1 small brown embryo on old weathered
termite mounds about 3-4 ft high

IC-7 IVORY COAST: 10 mi S.E. TOUBA, 420 M VIII-20-66 (Stop 20)
Nodosembia? very common on bark surfaces in high rain forest,
especially at scars. Also occurs in adjacent sav. woodlands in
many situations including bark, small saplings, edges of laterite rocks.

IC-8 IVORY COAST: 5 MI. S. SE. TOUBA, 800 M, VIII-20-66 (Stop 21)
1 large ♀ and young from under rock on exposed ridge
gallery extended up side of rock

IC-9 IVORY COAST: 14 MI. S. BAKO 450 M VIII-21-66
2-3 adult B+W ♀ $\frac{1}{2}$ " long with 1st instar from under surfaces
of freshly fallen branches on ground, elevated somewhat. Also in
crevices on surface of large termite mounds. Webs dirty, inconspicuous.

IC-10 IVORY COAST: SANANFÉREDOU GOU 400 M VIII-22-66 Stop 23
Several 1st + 2nd instar under bark flakes of felled tree with
loose bark. Old, weathered, large web nearly. Savanna woodland
in full leaf.

M-1 MALI: 13 MI. N. MANANKORO, 375 M VIII-22-66 Camp, Stop 24
Open savanna woodland on low rise many large meadows
or hard pan. Early instar cultures of prob same sp. as IC-10
under similar conditions 2nd instar run very fast. Each
embryo in a separate short tunnel.

- M-2 MALI: 25 MI. S. GAROLO, 350 M, VIII-23-66
Open savanna woods with hard latite ledges. Embriids in small patches of silk with a retreat into rock hole. Eggs laid on wall of hole, very tiny. Most nests had first instar clustered in ♀s cell. Recent rain. *Colyerella*
- M-3 MALI: 5 MI. S. MARAKO 350 M VIII-23-66 *Colyerella*
Same sp. from identical environment and niche. preserved 2♀
- M-4 MALI: BAMAKO, 405 M VIII-23-66
Small brown sp in matted leaves under stones in semi-shade. Dense scrub vegetation in full leaf. Arboretum preserve in Cyn above town. Just a few juv. *Berlandierella*
- M-5 MALI: SAME PLACE AS M-4 VIII-24-66 *dearthembria*
In crevices of shaded ledges, naked tunnels radiate outward over surfaces. devoid of food. Parent gallery thicker and speckled with feces. Brown ♀ and tiny 1st instar in nest. One had rows of eggs, tiny, naked eggs in walls of parent gallery.
- M-6 Same place VIII-24-66 *Colyerella*
2 ♀ in dead twig & branch beneath of low trees. Covered with visible outside crevices. Seems to be same as M-1.
- M-7 MALI: 40 MI. S.W. SAN, VIII-27-66, 300 M Camp stop
Young embriids in tunnels radiating under thin bark of 4" sapling, fresh cut, used as a pole in ground. About 25 2-3rd instar collected. Had to winch out of this camp. *Berlandierella*
- M-8 MALI: 10 MI. S.W. SAN, VIII-27-66 300 M
Young embriids numerous under bark flakes of shrub-like tree in tree clumps of dense scrubby savanna
- M-9 MALI: 21 MI. E. OF MOPTI, 350 M, VIII-27-66 (on rd to Bondiagara)
Camp stop in reddish ledges of Bondiagara escarpment, scattered trees. This colony of brown ♀ and young under bark flakes near blaze on small tree trunk. *Colyerella*
- M-10 MALI: same place
Small ♀ and young in matted leaves under stone. May be *Embria*
- M-11 Same place
B+W ♀ and young under bark flakes of large trees. Some colonies had large galleries but no adult ♀. May be *Berlandierella*.
Later found a few young next to cadaver of *Berlandierella* ♀, thus 2 spp in this culture.
- M-12 MALI: BANDIAGARA VIII-28-66
Four young embriids on one tree, one per web under bark flakes. On nearly tree old broad tunnels seen.

Numerous small, banded, rust & cream, only 1 star scattered in dry bark of isolated trees on flat in front of village (many photos on roll 15).

HV-1 HAUT VOLTA: 5 MI. N.W. OUAHIGOUYA, 250 M VIII-29-66

Numerous banded small young in tree bark flakes both on trunks and piled up litter at tree base. Tree very large. In bean field in sandy savanna zone. 2 pale males collected in litter

Berloundembia

HV-2 HAUT VOLTA: 35 KM. S. OUAGADOUGOU, 200 M VIII-31-66

Roadside stop. B+W females and young under bark flakes of large trees along road in savanna woodland. One or two plain tan species under rocks and matted leaves on wet ground along road. This culture is mixed.

Acanthembia

HV-3 Same place but only B+W. bark species.

Incidentally, *O. saundersi* was found on trees in Ouagadougou.

HV-4 HAUT VOLTA: 8 MI. N. PO, 300 M, VIII-31-66

Roadside stop in high dense savanna, high wet grass. Banded juveniles common on ~~tree~~ trunks of small trees in shade. Individual nests under soft bark flakes.

Berloundembia

G-1 GHANA: 22 MI. S. TAMALE, 150 M IX-1-66

Roadside stop in poor savanna, burned last season. A few young of 2 spp in bark crevices. Some banded sp and one even tan in flat galleries like *Nodocymbia*.

G-2 GHANA: 5 MI. S. GALUMPE, 100 M IX-2-66

Stop in high savanna. Some small banded young in bark crevices

G-3 GHANA: KINTAMPO 200 M, IX-2-66

About 6 of the above species in similar niche + environment. Almost rain forest in low spots. B+W ledge sp. seen here.

G-4 GHANA: ACOMADAN, 350 M, IX-2-66

High rain forest with understory cleared for cocoa. Collected tiny pale embiids - perhaps teratembiid under edges of thin bark flakes on buttressed large tree trunk. Also large number of B+W banded *Taeniotembia* *Plescombia*

G-5 Same place but only *Taeniotembia* on dead stumps old and rotting.

Large *Acanthembia*

G-6 GHANA: 16 MI. N. KUMASI 250 M IX-2-66

Camp up old log road. Same environment as above. B+W larger sp under bark flakes appears to be same as Barnako rock ledge sp. etc.

G-7 Same place
Parachiembia brunnea culture from vine-braided tree trunk

G-8 GHANA: 2 MI. S. KANONGA, 230 M, 1X-3-66
A high rain forest with substory cleared for cacao etc.
B+W young collected under stiff bark flakes near base of buttressed trunk. Not much silk visible until flake is removed.
Collected 2 adult ♂ Plesimbria. Each alone in its short gallery.

G-9 GHANA: MPRAESO, 500 M, 1X-3-66
Former rain forest. Collected Parachiembia in large galleries on large planted trees bordering rest house entrance road.
Adult ♀ & eggs, 1-2nd instar.

G-10 Same place and trees
Smaller sp. about 15 mm long some perult ♂ on trunks and old stump large numbers in single colony

G-11 Same place
Culture contains 3 spp. Plesimbria, ^{1 ♂ caught} G-10 sp. and a small, shiny brown + black sp. with perult ♂

G-12 GHANA: DAWA, 1X-7-66
Grassy plain dotted with scrub clumps in depressions. Not far above sea level. Dry conditions. Embiid webs common on certain low trunks, cultured, seems to be saundersii. Other webs under small stones, not cultured, may be something else

N-1 NIGERIA: 5 MI. W. ALAGBA (W. OF OTTA), 1X-8-66 Near sea level
Small sp. on rain forest trunks, galleries following small vines, chips and at times ramifying as in Nodosembia. Some perult males. Located in patch of cut up rain forest in native garden area.

N-2 Same place
Parachiembia ♀ and some 2nd instar young on large tree. One colony too high to really collect. Got ♀ and possibly some young.

N-3 NIGERIA: 30 MI. S. IBADAN, 50 M, 1X-9-66
Rain forest with heavy understory of cacao, 2nd growth etc. Few large trees along creek.
Culture contains 1 red + black ♀ and its brood which occupied a patch colony on a ridge of coarse bark on a buttress of large tree in shade. all young about 2-3 instar

PLESIMBRIA N. SP. Red + black sp. large colonies

N-4 Same place as N-3 at stop 47
Tiny species on bark of many kinds of trees. Some penult.
one adult or seen but lost *DIRADIVUS* N of dry river

N-5 NIGERIA: 10 MI. N. IBADAN, 250 M IX-9-66 at Stop 48
3 sp including Saundersii in hard coarse bark of large roadside
Acacia in transition forest-savanna zone. One is penult of
of black sp with white cerci

N-6 NIGERIA: 22 MI S. OGBOMOSHO, 350 M, IX-9-66, at stop 49
Orange and black young of various sizes up to $\frac{3}{8}$ " mixed with
Saundersii on trunks of palms in open fields in high-grass
savanna zone. The former distinguished by their more grayish
silk devoid of grass speckles.

N-7 NIGERIA: OGBOMOSHO, 375 M, IX-9-66 at stop 50
Trunks of shade trees in yard of rest house at S. end of town
Saundersii common. Culture contains B+W ♀ + eggs, a plain tan
female $\frac{1}{2}$ " long (Leptembia?), tiny species
B+W ♀
parthenogenetic
Taeniostembia

N-8 NIGERIA: ILORIN, 300 M, IX-10-66 at stop 51
Trunks of coarse-barked savanna acacias (?) in area thinned
by native agric. Saundersii common. Notocembia and one other sp.
collected. Lept, Berland Scelambie

N-9 NIGERIA: OKE-OYE (20 MI. N.E. ILORIN), 300 M, IX-10-66 at stop 52
Shade trees scattered on school grounds. Notocembia present
(webs pure-white, grass-free), a large banded species, Saundersii
most common. also a red and brown sp.
Scelambie

N-10 NIGERIA: 8 MI. S. JEBBA, 300 M, IX-10-66 at stop 53
~~Shade~~ Small trees along road in savanna zone, in bark crevices
soft bark. Red & brown species common, in various stages

N-11 NIGERIA: 19 MI. N. BOKANI, 250 M IX-10-66 at stop 54
Dense, lush, virgin, savanna woodland. Large brown ♀
and brood in bark scar. Webs gray, thin, grass-free.
1st instar young Scelambie

N-12 NIGERIA: Same as N-11
Notocembia (etc.?) in bark crevices. Saundersii abundant here.
Scelambie, Berland

N-13 NIGERIA: 9 MI. E. KONTAGORA, 300 M, IX-11-66 = STOP 55

Red + tan species and others? in usual bark crevices, flakes, especially in twigs and small branches. Savanna woods in full leaf dark Septembia or with orange head

N-14 NIGERIA: 4 MI. N. KAGARA (E. OF KONTAGORA), 360 M, IX-11-66

Bark of splintered branches + stumps of acacias along road. Red and tan sp. + blackish-brown banded sp. from 2nd to 3rd instar. Granitic hills with dense jungle among boulders at base.

N-15 NIGERIA: Same place but in the base jungle

Minute teratembid under bark flakes of various trees ^{in shade}. Galleries at times radiate on bark wood surfaces. These have a glossy sheen.

LEPTEMBIA FURCATA

N-16 } NIGERIA: KADUNA, M, IX-12-66

N-17 } Scelambria common on shade trees trunks in town. Parent webs large, pure white devoid of frass. 1-3rd instar webs radiating out in a pattern. Hundreds of young per nest.

above sent to SF.

N-18 NIGERIA: 45 MI. S.W. KANO, 680 M, = STOP 58 IX-13-66

Large species under stones on rocky ridge rising from agric plain. Hill had scrubby savanna nearly in original condition. Rocks occasionally had clean silk galleries adhering to side or underside, esp. in dry pockets, webs contained in curled brown leaves and to holes in ground, these not used because of excessive soil moisture. One embiid per loc.

N-19 NIGERIA: 28 MI. N.E. ZARIA, 720 M, IX-14-66 = STOP 60

2-3 spp. of embiids under bark flakes and small stones near rocky laterite ledge in cut-over savanna

Scelambria
+ Reuterembria

N-20 NIGERIA: 36 MI. S.E. SOBA, 790 M, IX-14-66 = STOP 62

1 ♀ Scelambria ^{OK} and a few 3rd instar in clean silk galleries on face of shaded granite ledge.

N-21 NIGERIA: 10 MI. N.W. JOS, 1225 M, IX-14-66

2-3 species incl. 1 black ♀ (n.sp.), and red + black under small laterite stone in denuded rolling hills.

R+C Plesioembria
Reuterembria

N-22 NIGERIA: JOS, 1250 M, IX-15-66

Scelambria very common on shade tree bark in town, also on surface of granite boulders. Adult females with 1st - 3rd instar young. Many of these per colony.

N-23 NIGERIA: 6 MI. S. JOS, 1250 M, IX-16-66

2-3 spp under granitic stones and flakes, esp. rock on rock embryos singly in small galleries at stone edge. One sp. is large and gold-and-brown similar to N-18

N-24 Same place EMBIA N.SP. same as N-25
On rock surfaces and beneath

same list notes as N-25
XII-27-67

N-25 Same place inside EMBIA N.SP.

In crevices of hollowed-out termite mound. Surfaces coated with lichen crust. Tunnels in burrows and galleries radiate on surface. XII-27-67 Culture killed numerous adult ♀, some of few nymphs except 1st instar and eggs. Eggs laid in loose clusters in web wall mixed with frass.

N-26 Large black species NIGERIA: 15 MI. S.W. BUKURU, 925 M, IX-16-66
Mouths under moss coating on palm trunk rising from shade of ravine in rugged escarpment terrain. Other galleries in ordinary crevices of dead trunks and branches of scrubby trees. Young in about 2nd instar.

N-27 Same place.
Small spp, some teratembiids in tiny galleries on trunks one red & brown nymph and probably Notoscombria.

N-28 Same place
Scelambria (?) on and under bark flakes

N-29 NIGERIA: 8 MI. S.W. BUKURU, 1150 M, IX-17-66

Large galleries leading under coarse lichen-crust bark flakes of gigantic native tree. Largest seen on plateau and remnant of ancient forest. Galleries at least 10 ft up and visible on higher branches. Adult ♀s with early young in large numbers ramifying on underside of flakes. Seems to be same species as N-26

PLESEMBOIA

N-30 NIGERIA: 7 MI. E. BAUCHI, 570 M, IX-17-66

Low, dense savanna on laterite flat. 2 spp in culture, one in patches of silk in bark flakes in shaded trunks in tree clumps, another (red & brown) under bark of small stumps. This sp. most numerous in culture

Beilanderella

- N-31 NIGERIA: 3 MI. S.W. LANZAI, BAUCHI PROV., 430 M, IX-18-66
 Low, dense, bush like savanna 2-3 spp in dead bark of branches. Most numerous a pale species (Berlandieria) which has ♀ nests and 2nd instar in hollow twig ends. Silk white, naked. Septembria + Berlandieria
- N-32 NIGERIA: 22 MI. E. DAMATURA, 400 M IX-19-66 Bush steps took pictures of herds + boys wearing hats
 2-3 spp in bark crevices of trees in thicket of larger trees in flat savanna much cut over for agric.
- N-33 NIGERIA: MAIDUGURI, 365 M. Agric center on Chad Road
 Large galleries at base of rough-barked Acacia, very large dense crown. Appears to be Emilia ♀s and 2-3rd instar young. Some galleries in matted leaves and piles of peanut shells.
- N-34 NIGERIA: same place
 2 spp? in dead bark of fence posts and in matted leaves at base of large trees bordering - road. Most have white-tipped antennae. 1 large pale Septembria ♂
- N-35 Same place. Some maturing ♂ of white-tipped sp.
- N-36 Larger culture of above species. Most under loose bark of fence posts. Webs radiating extensively. Young, about half grown tend to crowd in one section of system.
- N-37 NIGERIA: FOOTHILLS BEHIND GWOZA, 400 M, IX-27-66
 galleries radiating from crevice on face of shaded granite ledge. Adult ♀ and young. Webs naked. Steep slope of granite boulders with corn fields of pagans between.
- N-38 NIGERIA: GUDEF, IN HILLS BEHIND GWOZA, 800 M, IX-27-66
 Similar niche above in cooler zone with large trees, Palms etc. Distinct species with 1st instar young. Camped at SUM mission hospital
- N-39 NIGERIA: 7 MI. N. YUBA, 500 M, (STOP 76) IX-28-66
 Flat, dense savanna west of Mandara Mts, somewhat thinned for grazing. 1-2 spp in bark crevices of ^{dead} limbs of small trees.